

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

Listing of Claims:

1. **(Currently Amended)** A method of evaporating a solution, comprising feeding the solution to heat transmission surfaces (4) of parallel plate-formed heat exchanger elements (3) of an evaporator (1), from supply units (6, 31) spreading the solution to the top of said surfaces to flow downwards, removing the part of the solution (10) remaining from the evaporation and precipitate formed in connection with the evaporation from the lower end of the evaporator, and recycling said remaining part of the solution (10) back to the heat transmission surfaces (4) for re-evaporation, said recycling comprising conducting the solution to a liquid distribution space (14) common to said heat exchanger elements (3), separating the precipitate (23) from the solution in said distribution space, the solution forming an upward flow in the distribution space, and passing the solution to said supply units (6, 31) for being spread onto the heat transmission surfaces (4), characterized in that wherein the recycled solution is fed to the liquid distribution space (14) from a downwardly curved conduit (11) as a curved flow, to separate the precipitate (23) under the

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combined effect of gravity and centrifugal force, and the precipitate as separated is discharged to an exhaust pipe (21) from the bottom of the liquid distribution space.

2. (**Currently Amended**) A The method according to Claim 1, characterized in that wherein the solution to be recycled is fed into a narrow, elongated liquid distribution space (14) from its one end, and that the precipitate is removed into an exhaust pipe from the opposite end of the space.

3. (**Currently Amended**) A The method according to Claim 1 or 2, characterized in that wherein the solution to be recycled is fed underneath parallel lamellas (16) or an intermediate bottom (27) provided with ports (28-30), which are located in the liquid distribution space (14), so that the flow channels (22) between the lamellas, and the precipitate (23) is separated from the flow under the effect of centrifugal force.

4. (**Currently Amended**) A The method according to Claim 1 or 2, characterized in that wherein the precipitate is lead through an exhaust pipe (21) to a settling apparatus (25), where the precipitate is separated from the liquid phase the comes with it,

after which the liquid phase is connected to the recirculation flow of the solution that takes place in the evaporator.

5. **(Currently Amended)** A The method according to Claim 1 or 2, ~~characterized in that~~ wherein the evaporator is a film evaporator consisting of heat exchanger elements (3) made of flexible film material, such as plastic film. material.

6. **(Currently Amended)** An evaporator (1) comprising a jacket (2), parallel upright plate heat exchanger elements (3) fitted inside the jacket, said elements having upright heat transmission surfaces (4), supply units (6, 31) for spreading a solution to be evaporated to the top of said heat transmission surfaces to flow downwards on said surfaces, a liquid distribution space (14) common to said heat exchanger elements for feeding the solution to said supply units, means for removing the part of the solution (10) remaining from the evaporation and precipitate formed in connection with the evaporation from the lower end of the evaporator and for recycling said remaining part of the solution (10) back to the heat transmission surfaces (4) for re-evaporation, said recycling means comprising a conduit (11) connecting said lower end of the evaporator with said liquid distribution space (14), said space having means for separating the precipitate (23) from the solution

being recycled, ~~characterized in that~~ wherein said conduit (11) for recycling the solution forms a downward curve connected to the liquid distribution space (14), to feed the solution to said space as a curved flow and to separate the precipitate (23) under the combined effect of gravity and centrifugal force, and that an exhaust pipe (21) for discharging the precipitate as separated starts from the bottom of the liquid distribution space.

7. **(Currently Amended)** An The evaporator according to Claim 6, ~~characterized in~~ said evaporator being a film evaporator consisting of heat exchanger elements (3) made of flexible film ~~material, such as plastic film.~~ material.

8. **(Currently Amended)** An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the liquid distribution space (14) is located inside the evaporator jacket (2).

9. **(Currently Amended)** An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the recirculation line (11) is attached to one end of the elongated liquid distribution space (14), and that the exhaust pipe (21) for the precipitate starts from the opposite end of the liquid distribution space.

10. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the bottom of the liquid distribution space (14) is slanted downwards towards the exhaust pipe (21).

11. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the liquid distribution space (14) converges in a sphenoid or conic form towards the exhaust pipe (21).

12. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the supply units ~~comprises~~ comprise distributive nozzles (31) that start from the liquid distribution space (14) and spread out like fans, each one of them feeding solution to several parallel gaps between the heat transmission surfaces (4) of the heat exchanger elements (3), evaporation taking place in the gaps.

13. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the trough-like liquid distribution space (14) is provided with parallel, slanting lamellas (16) between which the solution is allowed to flow upwards.

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14. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the trough-like liquid distribution space (14) comprises an intermediate bottom (27) that divides it into a lower and upper part (17, 18) that the recirculation line (11) is attached, in the lateral direction, to the lower part (17) of the liquid distribution space, and that the intermediate bottom comprises ports, through which the solution is allowed to flow to the upper part (18) of the space at the same time as the precipitate (23) ends up in the exhaust pipe (21) that starts from the bottom of the space.

15. (**Currently Amended**) An The evaporator according to Claim 14, ~~characterized in that~~ wherein the flow routes formed by the openings in the intermediate bottom (27) are slanted upstream with regard to the incoming direction of the recirculation flow.

16. (**Currently Amended**) An The evaporator according to Claim 13, ~~characterized in that~~ wherein the trough-like liquid distribution space (14) is provided with a dam plate (15), over which the solution flows as an overflow to the supply units (6) of the parallel heat exchanger elements.

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17. (**Currently Amended**) An The evaporator according to Claim 6 or 7, ~~characterized in that~~ wherein the exhaust pipe (21) leads to a settling apparatus (24), which separates the precipitate from the liquid phase that comes with it, and that the settling apparatus is connected, by using a line (26), to the recirculation line (11), in order to join that separated liquid phase to the recirculation flow in the evaporator.

18-19. (**Canceled**)

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